



OpenStreetMap Data in Layered GIS Format

Free Shapefiles and GeoPackages – 2026-04-02

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Table of Contents

1	Preface.....	2
2	Introduction.....	2
2.1	Versions.....	2
2.2	Map datum.....	2
2.3	Character encoding.....	2
2.4	Attribute names.....	2
2.5	Common attributes.....	3
2.6	International Names.....	3
2.7	Layers.....	3
2.8	Points and Areas.....	3
2.9	Spillover Shape Files.....	4
3	Layer Overview.....	4
4	Point Features.....	5
4.1	Places (“places”).....	5
4.2	Points of Interest (“pois”).....	5
4.3	Places of Worship (“pofw”).....	11
4.4	Natural Features (“natural”).....	11
4.5	Traffic Related (“traffic”).....	12
4.6	Transport Infrastructure (“transport”).....	13
5	Line Features.....	13
5.1	Roads and Paths (“roads”).....	13
5.2	Railways, Subways, Trams, Lifts, and Cable Cars (“railways”).....	15
5.3	Waterways (“waterways”).....	15
6	Polygon Features.....	16
6.1	Administrative Areas (“adminareas”).....	16
6.2	Building outlines (“buildings”).....	17
6.3	Land use and land cover (“landuse”).....	17
6.4	Protected areas (“protected_areas”).....	18
6.5	Bodies of Water (“water”).....	18
7	Differences to Commercial “0.8” Shapefiles/GeoPackages.....	19
7.1	Associated Area Layer.....	19
7.2	Missing Layers.....	19
7.3	Missing Feature Classes.....	20
7.4	Missing Fields.....	21



1 Preface

The OpenStreetMap project has collected an enormous amount of free spatial data and the database is growing every day. Many people want to use this data for their own GIS projects but have been hindered by the use of a non-standard data format in the OSM project. This document describes a mapping from OSM data formats to the usual GIS formats to make the OSM data accessible to more people.

The mapping from OSM data to other formats is not an exact science. OSM rules on how to map certain features are often not well defined and there is no mandatory quality control. This openness allows a lot of flexibility and is part of the reason why OSM has been able to collect so much data in such a short time frame, but it makes using the data more difficult. When using or exporting the data, many decisions have to be made on how to extract the different features into something usable for the task at hand.

The mapping described in this document is in no way the only mapping possible, in fact there is an infinite number of possible mappings. In this document we have specified a general-use mapping of the basic features like roads, waterways, different land use types, and points of interest. Other uses might need specialized mappings, but they are out of the scope of this document.

The format described in this document is used by Geofabrik to create Shapefiles (*.shp) and Geopackages (*.gpkg) which are offered for free download from download.geofabrik.de.

2 Introduction

2.1 Versions

The commercially available Shapefiles and Geopackages from Geofabrik carry a version identifier in each layer name. The free shapes contain the name “free” in each layer name to distinguish them. The structure described in this document corresponds loosely to the “0.8” version of Geofabrik’s commercial shape files and Geopackages.

2.2 Map datum

All coordinates are unprojected WGS84 (EPSG:4326).

2.3 Character encoding

All strings are encoded in UTF-8.

2.4 Attribute names

All attribute names are lower case. In shape files, attribute names are limited to 9 characters, hence abbreviations are used for longer attributes. The abbreviated names are provided in



this document where applicable (e.g. “shp: whchair” for a column called “wheelchair”).

2.5 Common attributes

Most layers/shape files will have the following columns/attributes:

Attribute	PostGIS Type	Description
osm_id	BIGINT / VARCHAR(12)	OSM ID taken from the ID of this feature (node_id, way_id, or relation_id) in the OSM database. In case several features in the OSM database are joined into one feature, this is one of the IDs. This ID is not necessarily unique because one OSM object can result in several geometry objects. Also note that when doing shape file exports, this will be exported as a VARCHAR type since shape files don't support long integers.
code	SMALLINT (2 Bytes)	4 digit code (between 1000 and 9999) defining the feature class. The first one or two digits define the layer, the last two or three digits the class inside a layer.
fclass	VARCHAR(40)	Class name of this feature. This does not add any information that is not already in the “code” field but it is better readable.
name	VARCHAR(100)	Name of this feature, like a street or place name. If the name in OSM contains obviously wrong data such as “fixme” or “none”, it will be empty.

The code and the combination of layer name+fclass always contains the same information.

2.6 International Names

In OpenStreetMap, every feature can have many names. The standard name is always the name used on the ground, locally, usually the name as it would be written on a sign. There may be any number of additional names in different languages, plus also a specific “international name”. In cases where the local script is not latin script, the international name will often contain a transcribed version of the standard name.

By default, Geofabrik layers will always carry the standard name, the one that is given in OSM's “name” tag. If you need additional name (e.g. international name or names in a specific language), that can be arranged in the paid export service – please contact us.

2.7 Layers

In OSM there are no layers in the traditional GIS sense. All features are in one big coherent database.

For the purpose of the mapping described in this document, the features stored in the OSM database are extracted into different layers depending on their type.

All layers defined in this document use the “osm_” prefix for their names.

2.8 Points and Areas

The availability of high-resolution aerial imagery has led to many POI features being recorded as areas (building or site outlines), not points, in OpenStreetMap. You will, for



example, often find a restaurant or hotel drawn as an area. Features drawn as area in OpenStreetMap will be written to the layer with an `_a` suffix. Features drawn als line/point in OpenStreetMap will be written to the layer without an `_a` suffix.

2.9 Spillover Shape Files

For the shape file output format, whenever a layer becomes larger than 2 GB, additional shape files will be created. A shape file named “osm_pois_v08_1.shp” will spill over into shape files named “osm_pois_v08_2.shp”, “osm_pois_v08_3.shp” and so on.

Even if there is only a single shape file, it will always carry the postfix “_1” in the name.

This is not the case for other output formats, like GeoPackage.

3 Layer Overview

The following layers are available:

Geometry Code	Layer	Description
Point		
10xx	places	Cities, towns, suburbs, villages,...
2xxx	pois	Points of Interest, therein:
20xx		Public facilities such as government offices, post office, police, ...
21xx		Hospitals, pharmacies, ...
22xx		Culture, Leisure, ...
23xx		Restaurants, pubs, cafes, ...
24xx		Hotel, motels, and other places to stay the night
25xx		Supermarkets, bakeries, ...
26xx		Banks and atms
27xx		Tourist information, sights, museums, ...
29xx		Miscellaneous points of interest
3xxx	pofw	Places of worship such as churches, mosques, ...
41xx	natural	Natural features
52xx	traffic	Traffic related
50xx	transport	Parking lots, petrol (gas) stations, ...
Line		
51xx	roads	Roads, tracks, paths, ...
61xx	railway	Railway, subways, light rail, trams, ...
81xx	waterways	Rivers, canals, streams, ...
Polygon		
12xx	adminareas	Administrative boundaries
15xx	buildings	Building outlines
72xx	landuse	Forests, residential areas, industrial areas,...
73xx	protected_areas	Nature reserves, national parks
82xx	water	Lakes, ...



4 Point Features

4.1 Places (“places”)

Location for cities, towns, etc. Typically somewhere in the centre of the town.

Additional attributes:

Attribute	PostGIS Type	Description	OSM Tags
population	INTEGER	Number of people living in this place	population=*

Note that for many places the population is not available and will be set to 0. For islands the population is always 0.

The following feature classes exist in this layer:

code	fclass	Description	OSM Tags
1000			
1001	city	As defined by national/state/provincial government. Often over 100,000 people	place=city (but see 1005)
1002	town	As defined by national/state/provincial government. Generally smaller than a city, between 10,000 and 100,000 people	place=town
1003	village	As defined by national/state/provincial government. Generally smaller than a town, below 10,000 people	place=village
1004	hamlet	As defined by national/state/provincial government. Generally smaller than a village, just a few houses	place=hamlet
1005	national_capital	A national capital	place=city with either of (a) is_capital=country, (b) admin_level=2, (c) capital=yes and no admin_level set
1010	suburb	Named area of town or city	place=suburb
1020	island	Identifies an island	place=island
1030	farm	Named farm	place=farm
1031	dwelling	Isolated dwelling (1 or 2 houses, smaller than hamlet)	place=isolated_dwelling
1040	region	A region label (used in some areas only)	place=region
1041	county	A county label (used in some areas only)	place=county
1050	locality	Other kind of named place	place=locality

4.2 Points of Interest (“pois”)

The following feature classes exist in this layer:

code	group	fclass	Description	OSM Tags
20xx	public			
2001		police	A police post or station.	amenity=police



code	group	fclass	Description	OSM Tags
2002		fire_station	A fire station.	amenity=fire_station
2004		post_box	A post box (for letters).	amenity=post_box
2005		post_office	A post office.	amenity=post_office
2006		telephone	A public telephone booth.	amenity=telephone
2007		library	A library.	amenity=library
2008		town_hall	A town hall.	amenity=townhall
2009		courthouse	A court house.	amenity=courthouse
2010		prison	A prison.	amenity=prison
2011		embassy	An embassy.	amenity=embassy or office=diplomatic with diplomatic=embassy
2012		community_centre	A public facility which is mostly used by local associations for events and festivities.	amenity=community_centre
2013		nursing_home	A home for disabled or elderly persons who need permanent care.	amenity=nursing_home
2014		arts_centre	A venue at which a variety of arts are performed or conducted, and may well be involved with the creation of those works, and run occasional courses.	amenity=arts_centre
2015		graveyard	A graveyard.	amenity=grave_yard or landuse=cemetery
2016		market_place	A place where markets are held.	amenity=marketplace
2017		consulate	A consulate.	office=diplomatic with diplomatic=consulate
2030		recycling	A place (usually a container) where you can drop waste for recycling.	amenity=recycling with none of the specifics below
2031		recycling_glass	A place for recycling glass.	... recycling:glass=yes or recycling:glass_bottles=yes
2032		recycling_paper	A place for recycling paper.	... recycling:paper=yes
2033		recycling_clothes	A place for recycling clothes.	... recycling:clothes=yes
2034		recycling_metal	A place for recycling metal.	... recycling:scrap_metal=yes
208x			Education	
2081		university	A university.	amenity=university
2082		school	A school.	amenity=school
2083		kindergarten	A kindergarten (nursery).	amenity=kindergarten
2084		college	A college.	amenity=college
2099		public_building	An unspecified public building.	amenity=public_building
21xx	health			
2101		pharmacy	A pharmacy.	amenity=pharmacy
2110		hospital	A hospital.	amenity=hospital
2111		clinic	A medical centre that does not admit inpatients.	amenity=clinic
2120		doctors	A medical practice.	amenity=doctors
2121		dentist	A dentist's practice.	amenity=dentist
		veterinary	A veterinary (animal doctor)	amenity=veterinary
2129				
22xx	leisure			



code	group	fclass	Description	OSM Tags
2201		theatre	A theatre.	amenity=theatre
2202		nightclub	A night club, or disco.	amenity=nightclub
2203		cinema	A cinema.	amenity=cinema
2204		park	A park.	leisure=park
2205		playground	A playground for children.	leisure=playground
2206		dog_park	An area where dogs are allowed to run free without a leash.	leisure=dog_park
225x			Sports	
2251		sports_centre	A facility where a range of sports activities can be pursued.	leisure=sports_centre
2252		pitch	An area set aside for a specific sport.	leisure=pitch
2253		swimming_pool	A swimming pool or water park.	amenity=swimming_pool, leisure=swimming_pool, sport=swimming, leisure=water_park
2254		tennis_court	A tennis court.	sport=tennis
2255		golf_course	A golf course.	leisure=golf_course
2256		stadium	A stadium. The area of the stadium may contain one or several pitches.	leisure=stadium
2257		ice_rink	An ice rink.	leisure=ice_rink
23xx	catering		Catering services	
2301		restaurant	A normal restaurant.	amenity=restaurant
2302		fast_food	A fast-food restaurant.	amenity=fast_food
2303		cafe	A cafe.	amenity=cafe
2304		pub	A pub.	amenity=pub
		bar	A bar. The difference between a pub and a bar is not clear but pubs tend to offer food while bars do not.	amenity=bar
2305		food_court	A common seating area with various fast-food vendors.	amenity=food_court
2306		biergarten	An open-air area where food and drinks are served.	amenity=biergarten
2307				
24xx	accommodation		(indoor)	
2401		hotel	A hotel.	tourism=hotel
2402		motel	A motel.	tourism=motel
2403		bed_and_breakfast	A facility offering bed and breakfast.	tourism=bed_and_breakfast
2404		guesthouse	A guesthouse. The difference between hotel, bed and breakfast, and guest houses is not a strict one and OSM tends to use whatever the facility calls itself.	tourism=guest_house
2405		hostel	A hostel (offering cheap accomodation, often bunk beds in dormitories).	tourism=hostel
2406		chalet	A detached cottage, usually self-catering.	tourism=chalet
2420			(outdoor)	



code	group	fclass	Description	OSM Tags
2421		shelter	All sorts of small shelters to protect against bad weather conditions.	amenity=shelter
2422		camp_site	A camp site or camping ground.	tourism=camp_site
2423		alpine_hut	An alpine hut is a building typically situated in mountains providing shelter and often food and beverages to visitors.	tourism=alpine_hut
2424		caravan_site	A place where people with caravans or motorhomes can stay overnight or longer.	tourism=caravan_site
25xx shopping				
2501		supermarket	A supermarket.	shop=supermarket
2502		bakery	A bakery.	shop=bakery
2503		kiosk	A very small shop usually selling cigarettes, newspapers, sweets, snacks and beverages.	shop=kiosk
2504		mall	A shopping mall.	shop=mall
2505		department_store	A department store.	shop=department_store
2510		general	A general store, offering a broad range of products on a small area. Exists usually in rural and remote areas.	shop=general
2511		convenience	A convenience store is a small shop selling a subset of items you might find at a supermarket.	shop=convenience
2512		clothes	A clothes or fashion store.	shop=clothes
2513		florist	A store stelling flowers.	shop=florist
2514		chemist	A shop selling articles of personal hygiene, cosmetics, and household cleaning products.	shop=chemist
2515		bookshop	A book shop.	shop=books
2516		butcher	A butcher.	shop=butcher
2517		shoe_shop	A shoe shop.	shop=shoes
2518		beverages	A place where you can buy alcoholic and non-alcoholic beverages.	shop=alcohol, shop=beverages
2519		optician	A place where you can buy glasses.	shop=optician
2520		jeweller	A jewelry shop.	shop=jewelry
2521		gift_shop	A gift shop.	shop=gift
2522		sports_shop	A shop selling sports equipment.	shop=sports
2523		stationery	A shop selling stationery for private and office use.	shop=stationery
2524		outdoor_shop	A shop selling outdoor equipment.	shop=outdoor
2525		mobile_phone_shop	A shop for mobile phones.	shop=mobile_phone
2526		toy_shop	A toy store.	shop=toys
2527		newsagent	A show selling mainly newspapers and magazines.	shop=newsagent
2528		greengrocer	A shop selling fruit and vegetables.	shop=greengrocer
2529		beauty_shop	A shop that provides personal beauty services like a nail salon or tanning salon.	shop=beauty



code	group	fclass	Description	OSM Tags
2530		video_shop	A place where you can buy films.	shop=video
2541		car_dealership	A car dealership.	shop=car
2542		bicycle_shop	A bicycle shop.	shop=bicycle
2543		doityourself	A do-it-yourself shop where you can buy tools and building materials.	shop=doityourself and shop=hardware
2544		furniture_shop	A furniture store.	shop=furniture
2546		computer_shop	A computer shop.	shop=computer
2547		garden_centre	A place selling plants and gardening goods.	shop=garden_centre
2561		hairdresser	A hair salon.	shop=hairdresser
2562		car_repair	A car garage.	shop=car_repair
2563		car_rental	A place where you can rent a car.	amenity=car_rental
2564		car_wash	A car wash.	amenity=car_wash
2565		car_sharing	A car sharing station.	amenity=car_sharing
2566		bicycle_rental	A place where you can rent bicycles.	amenity=bicycle_rental
2567		travel_agent	A travel agency.	shop=travel_agency
2568		laundry	A place where you can wash clothes or have them cleaned.	shop=laundry, shop=dry_cleaning
2590		vending_machine	An unspecified vending machine.	amenity=vending_machine with none of the specifics below
2591		vending_cigarette	A cigarette vending machine.	vending=cigarettes
2592		vending_parking	A vending machine for parking tickets.	vending=parking_tickets
2593		vending_drinks	A vending machine for drinks.	amenity=vending_machine with vending=drinks
2594		vending_tickets	A vending machine for public transport tickets.	amenity=vending_machine with vending=public_transport_tickets
2600	money			
2601		bank	A bank.	amenity=bank
2602		atm	A machine that lets you withdraw cash from your bank account.	amenity=atm
2700	tourism		information	
2701		tourist_info	Something that provides information to tourists; may or many not be manned.	tourism=information with none of the specifics below
2704		tourist_map	A map displayed to inform tourists.	tourism_information and information=map
2705		tourist_board	A board with explanations aimed at tourists.	and information=board
2706		tourist_guidepost	A guide post.	and information=guidepost
			destinations	
2721		attraction	A tourist attraction.	tourism=attraction
2722		museum	A museum.	tourism=museum
2723		monument	A monument.	historic=monument
2724		memorial	A memorial.	historic=memorial



code	group	fclass	Description	OSM Tags
2725		art	A permanent work of art.	tourism=artwork
2731		castle	A castle.	historic=castle
2732		ruins	Ruins of historic significance.	historic=ruins
2733		archaeological	An excavation site.	historic=archaeological_site
2734		wayside_cross	A wayside cross, not necessarily old.	historic=wayside_criss
2735		wayside_shrine	A wayside shrine.	historic=wayside_shrine
2736		battlefield	A historic battlefield.	historic=battlefield
2737		fort	A fort.	historic=fort
2741		picnic_site	A picnic site.	tourism=picnic_site
2742		viewpoint	A viewpoint.	tourism=viewpoint
2743		zoo	A zoo.	tourism=zoo
2744		theme_park	A theme park.	tourism=theme_park
2900	miscpoi			
2901		toilet	Public toilets.	amenity=toilets
2902		bench	A public bench.	amenity=bench
2903		drinking_water	A tap or other source of drinking water.	amenity=drinking_water
2904		fountain	A fountain for cultural, decorative, or recreational purposes.	amenity=fountain
2905		hunting_stand	A hunting stand.	amenity=hunting_stand
2906		waste_basket	A waste basket.	amenity=waste_basket
2907		camera_surveillance	A surveillance camera.	man_made=surveillance
2921		emergency_phone	An emergency telephone.	amenity=emergency_phone, emergency=phone
2922		fire_hydrant	A fire hydrant.	amenity=fire_hydrant, emergency=fire_hydrant
2923		emergency_access	An emergency access point (signposted place in e.g. woods the location of which is known to emergency services).	highway=emergency_access_point
2950		tower	A tower of some kind.	man_made=tower and none of the specifics below
2951		tower_comms	A communications tower.	man_made=tower and tower:type=communication
2952		water_tower	A water tower.	man_made=water_tower
2953		tower_observation	An observation tower.	man_made=tower and tower:type=observation
2954		windmill	A windmill.	man_made=windmill
2955		lighthouse	A lighthouse.	man_made=lighthouse
2961		wastewater_plant	A wastewater treatment plant.	man_made=wastewater_plant
2962		water_well	A facility to access underground aquifers.	man_made=water_well
2963		water_mill	A mill driven by water. Often historic.	man_made=watermill
2964		water_works	A place where drinking water is processed.	man_made=water_works



4.3 Places of Worship (“pofw”)

The following feature classes exist in this layer:

code	fclass	Description	OSM Tags
3000		Places of worship	
3100	christian	A christian place of worship (usually a church) without one of the denominations below.	amenity=place_of_worship + religion=christian
3101	christian_anglican	A christian place of worship where the denomination is known. (Note to German users: “protestant” is “evangelisch” in German; “evangelical” is “evangelikal” in German.)	+ denomination=anglican
3102	christian_catholic		+ denomination=catholic
3103	christian_evangelical		+ denomination=evangelical
3104	christian_lutheran		+ denomination=lutheran
3105	christian_methodist		+ denomination=methodist
3106	christian_orthodox		+ denomination=orthodox
3107	christian_protestant		+ denomination=protestant
3108	christian_baptist		+ denomination=baptist
3109	christian_mormon		+ denomination=mormon
3200	jewish	A jewish place of worship (usually a synagogue).	amenity=place_of_worship + religion=jewish
3300	muslim	A muslim place of worhsip, (usually a mosque) without one of the denominations below.	amenity=place_of_worship + religion=muslim
3301	muslim_sunni	A Sunni muslim place of worship.	+ denomination=sunni
3302	muslim_shia	A Shia muslim place of worship.	+ denomination=shia
3400	buddhist	A Buddhist place of worship.	amenity=place_of_worship + religion=buddhist
3500	hindu	A Hindu place of worship.	amenity=place_of_worship + religion=hindu
3600	taoist	A Taoist place of worship.	amenity=place_of_worship + religion=taoist
3700	shintoist	A Shintoist place of worship.	amenity=place_of_worship + religion=shintoist
3800	sikh	A Sikh place of worship.	amenity=place_of_worship + religion=sikh

4.4 Natural Features (“natural”)

The following feature classes exist in this layer:

code	fclass	Description	OSM Tags
4101	spring	A spring, possibly source of a stream.	natural=spring
4103	glacier	A glacier.	natural=glacier
4111	peak	A mountain peak.	natural=peak
4112	cliff	A cliff.	natural=cliff
4113	volcano	A volcano.	natural=volcano
4121	tree	A tree.	natural=tree
4131	mine	A mine.	natural=mine
4132	cave_entrance	A cave entrance.	natural=cave_entrance
4141	beach	A beach. (Note that beaches are only rarely mapped as point features.)	natural=beach



4.5 Traffic Related (“traffic”)

This layer exists both as area and as point layer (see section 2.8).

The following feature classes exist in this layer:

code	fclass	Description	OSM Tags
5201	traffic_signals	Traffic lights.	highway=traffic_signals
5202	mini_roundabout	A small roundabout without physical structure, usually just painted onto the road surface.	highway=mini_roundabout
5203	stop	A stop sign.	highway=stop
5204	crossing	A place where the street is crossed by pedestrians or a railway.	highway=crossing, railway=level_crossing
5205	ford	A place where the road runs through a river or stream.	highway=ford
5206	motorway_junction	The place where a slipway enters or leaves a motorway.	highway=motorway_junction
5207	turning_circle	An area at the end of a street where vehicles can turn.	highway=turning_circle
5208	speed_camera	A camera that photographs speeding vehicles.	highway=speed_camera
5209	street_lamp	A lamp illuminating the road.	highway=street_lamp
Fuel and Parking			
5250	fuel	A gas station.	amenity=fuel
5251	service	A service area, usually along motorways.	highway=services
5260	parking	A car park of unknown type.	amenity=parking with none of the specifics below and without access=private/customers
5261	parking_surface	A surface car park.	amenity=parking and... ... parking=surface and without access=private/customers
5262	parking_multistorey	A multi storey car park.	... parking=multi-storey and without access=private/customers
5263	parking_underground	An underground car park.	... parking=underground and without access=private/customers
5264	parking_street	On-street parking.	... parking=street_side/lane and without access=private/customers
5270	parking_bicycle	A place to park your bicycle.	amenity=bicycle_parking and without access=private/customers
5271	bicycle_repair_station	A bicycle repair station.	amenity=bicycle_repair_station
Water Traffic			
5301	slipway	A slipway.	leisure=slipway
5302	marina	A marina.	leisure=marina
5303	pier	A pier.	man_made=pier
5311	dam	A dam.	waterway=dam
5321	waterfall	A waterfall.	waterway=waterfall
5331	lock_gate	A lock gate.	waterway=lock_gate



code	fclass	Description	OSM Tags
5332	weir	A barrier built across a river or stream.	waterway=weir

Note: Most of the 53xx type objects do sometimes appear as linear features in OSM as well but those are not yet available in the export files.

4.6 Transport Infrastructure (“transport”)

This layer exists both as area and as point layer (see section 2.8).

The following feature classes exist in this layer:

code	fclass	Description	OSM Tags
5601	railway_station	A larger railway station of mainline rail services.	railway=station
5602	railway_halt	A smaller, local railway station, or subway station.	railway=halt, or public_transport=stop_position + train=yes
5603	tram_stop	A tram stop.	railway=tram_stop, or public_transport=stop_position + tram=yes
5621	bus_stop	A bus stop.	highway=bus_stop, or public_transport=stop_position + bus=yes
5622	bus_station	A large bus station with multiple platforms.	amenity=bus_station
5641	taxi_rank	A taxi rank.	amenity=taxi
565x		Air Traffic	
5651	airport	A large airport.	amenity=airport or aeroway=aerodrome unless type=airstrip
5652	airfield	A small airport or airfield.	aeroway=airfield, military=airfield, aeroway=aeroway with type=airstrip
5655	helipad	A place for landing helicopters.	aeroway=helipad
5656	apron	A apron (area where aircraft are parked)	aeroway=apron
566x		Water Traffic	
5661	ferry_terminal	A ferry terminal.	amenity=ferry_terminal
567x		Other Traffic	
5671	aerialway_station	A station where cable cars or lifts alight.	aerialway=station

5 Line Features

5.1 Roads and Paths (“roads”)

All kinds of roads from motorways to gravel tracks as well as cycleways, footpaths, etc.

Additional attributes:



Attribute	PostGIS Type	Description	OSM Tags
ref	VARCHAR(20)	Reference number of this road ('A 5', 'L 605', ...)	ref=*
oneway	VARCHAR(1)	Is this a oneway road? "F" means that only driving in direction of the linestring is allowed. "T" means that only the opposite direction is allowed. "B" (default value) means that both directions are ok.	oneway=*
maxspeed	SMALLINT	Max allowed speed in km/h	maxspeed=*
layer	SMALLINT	Relative layering of roads (-5, ..., 0, ..., 5)	layer=*
bridge	VARCHAR(1)	Is this road on a bridge? ("T" = true, "F" = false)	bridge=*
tunnel	VARCHAR(1)	Is this road in a tunnel? ("T" = true, "F" = false)	tunnel=*

The following feature classes exist in this layer:

code	fclass	Description	OSM Tags
511x		Major roads	
5111	motorway	Motorway/freeway	highway=motorway
5112	trunk	Important roads, typically divided	highway=trunk
5113	primary	Primary roads, typically national.	highway=primary
5114	secondary	Secondary roads, typically regional.	highway=secondary
5115	tertiary	Tertiary roads, typically local.	highway=tertiary
512x		Minor Roads	
5121	unclassified	Smaller local roads	highway=unclassified
5122	residential	Roads in residential areas	highway=residential
5123	living_street	Streets where pedestrians have priority	highway=living_street
5124	pedestrian	Pedestrian only streets	highway=pedestrian
5125	busway	Dedicated roads for bus, usually closed for any mode of transport except public transport.	highway=busway
513x		Highway links (sliproads/ramps)	
5131	motorway_link	Roads that connect from one road to another of the same or lower category.	highway=motorway_link
5132	trunk_link		highway=trunk_link
5133	primary_link		highway=primary_link
5134	secondary_link		highway=secondary_link
5135	tertiary_link		highway=tertiary_link
514x		Very small roads	
5141	service	Service roads for access to buildings, parking lots, etc.	highway=service
5142	track	For agricultural use, in forests, etc. Often gravel roads.	highway=track without tracktype specification
5143	track_grade1	Tracks can be assigned a "tracktype" from 1 (asphalt or heavily compacted) to 5 (hardly visible). A detailed description is here:	... with tracktype=grade1
5144	track_grade2	http://wiki.openstreetmap.org/wiki/Tracktype	... with tracktype=grade2
5145	track_grade3		... with tracktype=grade3
5146	track_grade4		... with tracktype=grade4
5147	track_grade5		... with tracktype=grade5
515x		Paths unsuitable for cars	
5151	bridleway	Paths for horse riding	highway=bridleway or highway=path with horse=designated
5152	cycleway	Paths for cycling	highway=cycleway or highway=path with cycle=designated



code	fclass	Description	OSM Tags
5153	footway	Footpaths	highway=footway or highway=path with foot=designated
5154	path	Unspecified paths	highway=path without cycle/foot/horse=designated
5155	steps	Flights of steps on footpaths	highway=steps
Unknown			
5199	unknown	Unknown type of road or path	highway=road

5.2 Railways, Subways, Trams, Lifts, and Cable Cars (“railways”)

Railways do not have a name attribute. Instead, they have the following additional attributes:

Attribute	PostGIS Type	Description	OSM Tags
layer	SMALLINT	Relative layering of railways/roads (-5, ..., 0, ..., 5)	layer=*
bridge	VARCHAR(1)	Is this road on a bridge? (“T” = true, “F” = false)	bridge=*
tunnel	VARCHAR(1)	Is this road in a tunnel? (“T” = true, “F” = false)	tunnel=*

The following feature classes exist in this layer:

code	fclass	Description	OSM Tags
6101	rail	Regular railway tracks.	railway=rail (unless traction=* also set)
6102	light_rail	Light railway tracks, often commuter railways.	railway=light_rail
6103	subway	Underground railway tracks.	railway=subway
6104	tram	Tram tracks (may be incident with roads).	railway=tram
6105	monorail	A monorail track.	railway=monorail
6106	narrow_gauge	A narrow gauge railway track.	railway=narrow_gauge
6107	miniature	A miniature railway track.	railway=miniature
6108	funicular	A funicular, (cable railway) usually on a steep incline.	railway=funicular, or railway=rail with traction=funicular
6109	rack	A rack railway	railway=rack, or railway=rail with traction=rack or railway=rail with rack=yes
6111	drag_lift	An overhead tow-line for skiers.	aerialway=drag_lift
6112	chair_lift	An open chairlift run.	aerialway=chair_lift or high_speed_chair_lift
6113	cable_car	A cabin cable car run.	aerialway=cable_car
6114	gondola	An aerialway where the cabins go around in a circle,	aerialway=gondola
6115	goods	An aerialway for the transport of goods.	aerialway=goods
6119	other_lift	Another type of lift.	aerialway=one of platter, t-bar, j-bar, magic_carpet, zip_line, rope_tow, or mixed_lift

5.3 Waterways (“waterways”)

Additional attributes:

Attribute	PostGIS Type	Description	OSM Tags
width	SMALLINT	Width of the waterway in metres.	width=*



The following feature classes exist in this layer:

code	fclass	Description	OSM Tags
8101	river	A large river.	waterway=river
8102	stream	A smaller river or stream.	waterway=stream
8103	canal	An artificial waterway.	waterway=canal
8104	drain	A small drainage ditch or similar structure.	waterway=drain

Note that in OSM larger rivers are often available as polygon geometries and line geometries; the line geometry will then run through the middle of the river in the direction of the water flow.

6 Polygon Features

Polygon features are extracted from simple polygons and from multipolygons in OSM.

6.1 Administrative Areas (“adminareas”)

This layer contains polygons built from boundary lines.

The following feature classes exist in this layer:

code	fclass	Description	OSM Tags
1200			boundary=administrative
1201	admin_level1		+ admin_level=1
1202	national	National border	+ admin_level=2
1203	admin_level3		+ admin_level=3
1204	admin_level4	Usually a border of the first level below national; NUTS-2 (Germany: Land, France: région, UK: England/Scotland/Wales...).	+ admin_level=4
1205	admin_level5		+ admin_level=5
1206	admin_level6	Usually a border of the second level below national; NUTS-3 (Germany: Kreis, France: département, UK: county...).	+ admin_level=6
1207	admin_level7		+ admin_level=7
1208	admin_level8	Usually a city or borough boundary.	+ admin_level=8
1209	admin_level9		+ admin_level=9
1210	admin_level10		+ admin_level=10
1211	admin_level11		+ admin_level=11

Note that due to editing errors introduced by OpenStreetMap contributors and also due to lack of data in some areas, there is no guarantee that these areas are complete; there may always be missing bits. Contact Geofabrik if you are interested in a redacted data set.

Note that by default OSM neither has a codified hierarchy (i.e. city X is in county Y is in state Z...), nor do OSM boundaries end at the coastline – national and sometimes sub-national boundaries will include territorial waters. Data sets with a constructed hierarchy, or with a clipping of administrative areas to the coastline, can be ordered from Geofabrik.



The exact meaning of the `admin_levels` 1 to 11 varies between countries and is documented in detail on the OpenStreetMap Wiki: http://wiki.openstreetmap.org/wiki/Admin_level

6.2 Building outlines (“buildings”)

Buildings don't have a name attribute.

Additional attributes:

Attribute	PostGIS Type	Description	OSM Tags
type	VARCHAR(20)	The type of building, if specified in OSM; otherwise empty.	building=(anything other than yes)

The following feature classes exist in this layer:

code	layer	fclass	Description	OSM Tags
1500	buildings		Building outlines	building=*

6.3 Land use and land cover (“landuse”)

The following feature classes exist in this layer:

code	fclass	Description	OSM Tags
7201	forest	A forest or woodland.	landuse=forest, natural=wood
7202	park	A park.	leisure=park, leisure=common
7203	residential	A residential area.	landuse=residential
7204	industrial	An industrial area.	landuse=industrial
7206	cemetery	A cemetery or graveyard.	landuse=cemetery
7207	allotments	An area with small private gardens.	landuse=allotments
7208	meadow	A meadow, possibly used for grazing cattle.	landuse=meadow
7209	commercial	A commercial area.	landuse=commercial
7211	recreation_ground	An open green space for general recreation.	leisure=recreation_ground or landuse_recreation_ground
7212	retail	An area mainly used by shops.	landuse=retail
7213	military	Military landuse, usually no access for civilians.	landuse=military
7214	quarry	A quarry.	landuse=quarry
7215	orchard	An area used for growing fruit-bearing trees.	landuse=orchard
7216	vineyard	An area used for growing grapes.	landuse=vineyard
7217	scrub	An area where scrub grows.	landuse=scrub
7218	grass	An area where grass grows.	landuse=grass
7219	heath	Heath areas.	natural=heath
7228	farmland	Agricultural land (areas where crops are grown)	landuse=farmland
7229	farmyard	Area of land with farm buildings and the shrubbery/trees around them.	landuse=farmyard
7233	landfill	A site for permanent or long term storage of waste materials.	landuse=landfill



6.4 Protected areas (“protected_areas”)

This layer contains areas where nature, wildlife or environment is protected by stricter rules than usual. The feature classes follow the ICUN (International Union for Conservation of Nature) categories for protected areas. See https://wiki.openstreetmap.org/wiki/Key:protect_class for details.

This layer has following additional attributes:

Attribute	PostGIS Type	Description	OSM Tags
icun	VARCHAR(10)	ICUN category, may contain multiple values separated by semicolon	protect_class=*
title	VARCHAR(100)	An official national predicate or grade, the formal title or type of protection	protection_title=*

This layer contains the following feature classes:

code	fclass	Description	OSM Tags
7300	other_nature_reserve	Nature reserves without detailed specification about protection. If an area has an ICUN category assigned in OpenStreetMap, it will have any of the features classes below.	leisure=nature_reserve (fallback only)
7301	icun_1	Strict Nature Reserve (ICUN 1a) or Wilderness Area (ICUN 1b)	boundary=protected_area + protect_class=1/1a/1b
7302	national_park	National Park (ICUN 2)	boundary=national_park or boundary=protected_area + protect_class=2
7303	icun_3	Natural Monument or Feature (ICUN 3)	boundary=protected_area + protect_class=3
7304	icun_4	Habitat/Species Management Area (ICUN 4)	boundary=protected_area + protect_class=4
7305	icun_5	Protected Landscape/Seascape (ICUN 5)	boundary=protected_area + protect_class=5
7306	icun_6	Protected area with sustainable use of natural resources (ICUN 6)	boundary=protected_area + protect_class=6
7307	icun_7	Smaller areas where some natural features are protected (ICUN 7)	boundary=protected_area + protect_class=7
7308	icun_8	Area protected by international treaties, e.g. Natura 2000, EU Birds Directive, Alpine Convention, Ramsar Agreement	boundary=protected_area + protect_class=97/98 or ramar=yes

6.5 Bodies of Water (“water”)

The following feature classes exist in this layer:

code	fclass	Description	OSM Tags
8200	water	Unspecified bodies of water. Typically lakes, but can also be larger rivers, harbours, etc.	natural=water + water!=river/reservoir
8201	reservoir	Artificial lakes, typically above a dam.	landuse=reservoir, natural=water + water=reservoir



code	fclass	Description	
8202	river	Polygons for larger rivers.	waterway=riverbank, natural=water + water=river
8203	dock	Dock (to repair ships, don't confuse it with the American term "dock")	waterway=dock
8211	glacier	Glaciers	natural=glacier
8221	wetland	Wetland	natural=wetland

Note that in OSM larger rivers are often available as polygon geometries and line geometries; the line geometry will then run through the middle of the river in the direction of the water flow.

7 Differences to Commercial "0.8" Shapefiles/GeoPackages

Geofabrik offers an extended version of these shapes, for arbitrary areas, commercially. These 0.8 files contain the following extensions compared to the free files:

7.1 Associated Area Layer

If a feature class exists both as area and as points in OpenStreetMap, point layers in our commercial data sets will contain a centroid point of the area. The geomtype field of this objects is set to "W" (way) or "R" (relation). If you are using both the polygon and the point layers of the commercial data sets, you will want to exclude all objects of a point layer with geomtype="W" or "R" prevent objects mapped as areas in OpenStreetMap being drawn twice.

7.2 Missing Layers

The Following layers are not part of the free shape files and GeoPackages. They are only available in the commercial datasets that can be purchased from Geofabrik:

Geometry	Code	Layer	Description
Point			
	64xx	power	Power generators, substations, ...
Line			
	11xx	boundaries	Borders between countries ...
	55xx	barriers	Natural or man-made barrier lines like fence, hedges or walls
	66xx	powerlines	Power lines
	67xx	runways	Runways and taxiways at airports
	83xx	coastline	Coastline
	53xx, 54xx, nonop		Roads and railways planned, under construction, or disused
	55xx, 56xx,		
	62xx, 63xx,		
	64xx, 65xx		
	91xx	cycle_route_segments	Roads of cycle roads which are not available in the routes layer (codes 90xx).

MultiLineString



Geometry	Code	Layer	Description
	90xx	routes	Routes for cycling, hiking, mountain bikes, nordic walking and running

7.3 Missing Feature Classes

The following table shows all feature classes which are not part of the free shape files and GeoPackages. Feature classes which are part of layers given in section 7.2 are not listed here.

code(s)	layer	fclass(es)
1005	places	national_capital
565x	transport	airport, airfield, helipad, terminal
5671	transport	aerialway_station
2524	pois	outdoor_shop
2525	pois	mobile_phone_shop
2529	pois	beauty_shop
2530	pois	video_shop
2260	pois	bleachers
2262	pois	horse_riding
2263	pois	fishing
2264	pois	sauna
2265	pois	beach_resort
2266	pois	dance
2407	pois	apartment
2408	pois	resort
2506	pois	farm
2507	pois	confectionery
2508	pois	deli
2509	pois	seafood
2531	pois	electronics
2532	pois	variety_store
2533	pois	copyshop
2534	pois	funeral_directors
2535	pois	tailor
2536	pois	interior_decoration
2537	pois	ticket
2538	pois	houseware
2539	pois	boutique
2540	pois	cosmetics
2541	pois	car_dealership
2544	pois	furniture_shop
2548	pois	car_parts
2549	pois	tyres
2550	pois	trade
2551	pois	pastry
2552	pois	art
2569	pois	motorcycle
2570	pois	pet



code(s)	layer	fclass(es)
2571	pois	photo
2572	pois	massage
2908	pois	picnic_table
2909	pois	outdoor_seating
2910	pois	firepit
2921	pois	emergency_phone
2922	pois	fire_hydrant
2923	pois	emergency_access_point
4103	natural	glacier
4114	natural	sinkhole
4115	natural	hot_spring
4116	natural	rock
4142	natural	grassland
4143	natural	bare_rocks
4144	natural	sand
4145	natural	scree
4146	natural	fell
4121	natural	tree
5208	traffic	speed_camera
5209	traffic	street_lamp
521x, 522x	traffic	barriers on roads and paths, e.g. lift gates and bollards; traffic calming
5657	transport	terminal
7221	landuse	basin
7222	landuse	village_green
7223	landuse	plant_nursery
7224	landuse	brownfield
7225	landuse	greenfield
7226	landuse	construction
7227	landuse	railway
7230	landuse	greenhouses
7231	landuse	religious
7232	landuse	garages
7234	landuse	education
8105	waterways	ditch
8211	water	glacier
611x	railways	drag_lift, chair_lift, cable_car, gondola, goods, other_lift

7.4 Missing Fields

The following fields are not available in the free shape files:

Layer	Attribute	PostGIS Type	Description	OSM Tags
<i>all layers</i>	lastchange	TIMESTAMP WITHOUT TIME ZONE	Last change of this feature. Comes from the OSM last_changed attribute. Reflects changes in the attributes of a feature; changes in the geometry will not necessarily change this.	



Version History and Copyright

Version	Created At	Changes
initial	2016-08-12	Revamped free shape files now based on the commercially produced “0.7.0” shapes by Geofabrik.
2	2016-12-07	Updates in section 7 reflecting some changes made to the commercial shapes.
3	2017-01-24	Use amenity=taxi instead of amenity=taxi_rank. See taginfo.osm.org for details. Add waterway=dock.
4	2017-03-02	Swap codes 5205 and 5208 (ford and speed camera). They were swapped in the produced shape files. Add Buddhist, Taoist, Shintoist, Sikh and Hindu places of worship.
5	2017-10-06	Updates in chapter “Differences to Commercial “0.7” Shape Files”. Split up feature class “farm” into “farmyard” and “farmland”.
6	2019-01-17	Interpret OSM tags natural=water + water=river and natural=water + water=reservoir for feature classes “river” and “reservoir” in addition to waterway=riverbank and landuse=reservoir.
7	2019-05-21	Updates in chapter “Differences to Commercial “0.7” Shape Files”.
8	2020-01-13	Updates in chapter “Differences to Commercial “0.7” Shape Files”.
9	2021-07-08	Only add objects with amenity=place_of_worship to pofw layer. Add recycling:glass_bottles=yes to code 2031 (recycling_glass).
10	2021-08-12	Add code 2510 (general) for general stores to poi layer.
11	2022-03-31	Add code 5125 (busway).
12	2022-04-29	Add 2111 (clinic).
13	2026-04-02	Add code 5271 (bicycle_repair_station) to traffic layer. Fix code 5261 (parking_surface), add 5264 (parking_street). Split 8221 (wetland) into individual feature classes for different types of wetlands. Remove swimming pools, car parking and bicycle parking tagged with access=private or access=private. Rename feature class market_place to marketplace to match OSM tag value. Add OSM objects with shop=wine to feature class 2518 (beverages). Add code 7233 (landfill) to “landuse” layer. Add code 2017 (consulate) to POIs and restrict 2011 to just embassy. Add codes 2593 , 2594 (vending_drinks, vending_tickets) to POIs. Add new layer “protected_areas”. Move code 7220 (national_park) from “landuse” layer as 7302 to that layer. Replace code 7210 (nature_reserve) on “landuse” layer by codes 7300 to 7308 on “protected_areas” layer. Add new layer “adminareas” (previously only available in paid files).

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